

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1 - 10. (Canceled)

11. (Amended) A [compound]composition for impairing a hematologic cancer progenitor cell comprising an antibody and a cytotoxic agent, wherein the composition[that binds selectively to CD123 and causes impairment[s] of the hematologic cancer progenitor cell[s].

12. (Amended) The composition[und] of claim 11, wherein [said] the cytotoxic agent is a chemotherapeutic agent[compound comprises an antibody].

13. (Amended) The composition[und] of claim 11[2], wherein the[said compound further comprises a]cytotoxic agent is a plant-, fungus- or bacteria-derived toxin.

14. (Amended) The composition[und] of claim 11[3], wherein [said]the cytotoxic agent is a radioisotope.

15. (Amended) The composition[und] of claim 14, wherein [said]the radioisotope is an alpha-emitting radioisotope[selected from the group consisting of ²¹¹Astatine and ¹³¹Iodine].

16. (Amended) An assay for detecting the presence of hematologic cancer progenitor cells in a sample, comprising introducing to the sample an antibody that binds selectively to CD123 and determining whether the compound binds to a component of the sample[detecting the presence of CD123 in said sample].

17. (Amended) The assay of claim 16, wherein the antibody is labeled with a detectable label[presence of CD123 is detected by introducing a compound that selectively binds to CD123 and determining whether the compound binds to a component of said sample].

18. (New) The composition of claim 11, wherein the hematologic cancer progenitor cell is a leukemic or malignant lymphoproliferative cell.

19. (New) The method according to claim 18, wherein the leukemic cell is selected from the group consisting of acute myelogenous leukemia, chronic myelogenous leukemia, myelodysplastic syndrome, acute lymphoid leukemia, chronic lymphoid leukemia, and myelodysplastic syndrome.

20. (New) The method according to claim 18, wherein the malignant lymphoproliferative cell is a lymphoma.

21. (New) The method according to claim 20, wherein the lymphoma is selected from the group consisting of multiple myeloma, non-Hodgkin's lymphoma, Burkitt's lymphoma, and follicular lymphoma (small cell and large cell).

22. (New) A method for purifying hematopoietic cells comprising, introducing the composition of claim 11 to a bone marrow cell sample or peripheral blood sample.

23. (New) A method for selectively impairing cancerous progenitor cells of a patient in need thereof, comprising introducing the composition of claim 11 to the patient's bone marrow or peripheral blood sample.

24. (New) A method of purging cancerous progenitor cells in a patient in need thereof, comprising:

- (a) providing an antibody that binds selectively to CD123;
- (b) introducing the antibody to the patient to permit binding of the antibody to cancerous progenitor cells; and
- (c) removing bound antibody-cancerous progenitor cells.

25. (New) The method according to claim 24 wherein the antibody is introduced to the bone marrow of the patient.

26. (New) The method according to claim 24 wherein the antibody is introduced to the peripheral blood of the patient.